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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/558,453	04/25/2000	Zhejie Liu	15939-18	9214

7590

11/06/2002

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EXAMINER

LAM, THANH

ART UNIT PAPER NUMBER

2834

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/558,453

Applicant(s)
Liu et al.

Examiner
Thanh Lam

Art Unit
2834



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on CPA filed on 10/11/2002

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 2-7 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 2-7 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

4) ☐ Interview Summary (PTO-413) Paper No(s). _____

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

6) ☐ Other:

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DETAILED ACTION

Continued Prosecution Application

1. The request filed on 10/11/2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/558453 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 2-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Dunfield et al. (5,850,318).

Regarding claim 2, Dunfield et al. disclose a spindle motor including a stator component (34) and a rotor component, said components including a shaft (34) and a hub, said shaft and hub (66) being provided for relative rotation and said hub for supporting one or more discs, said hub including a hub sleeve including, a cylindrical portion (36) surrounding said shaft, said motor comprising a bearing assembly between the components, formed of a journal bearing and a thrust bearing, wherein the journal bearing is an aerodynamic bearing (54) provided between said

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shaft and said cylindrical portion of said hub sleeve and the thrust bearing is adapted to function in a bi-directional manner and includes an annular member (45) projecting radially from one of the shaft and sleeve into an associated recess formed in the other of the shaft and sleeve, wherein the annular member has two opposed bearing faces arranged adjacent corresponding bearing surfaces of said recess portion, and a hydrodynamic thrust bearing (60) is formed between the respective bearing faces and surfaces, both a hydrodynamic thrust bearing and an aerodynamic journal bearing thereby being provided between said shaft and said hub sleeve of said components.

Regarding claim 3, Dunfield et al. disclose the journal bearing is formed between said shaft and said hub sleeve and the shaft is provided with a passage extending therethrough for providing air flow through the motor to the aerodynamic bearing, so as to allow air to be entrained into the journal bearing during operation.

Regarding claim 4, Dunfield et al. disclose the bearing surfaces diverge from the bearing faces adjacent said shaft so that liquid between the annular member and said recess portion of said hub sleeve is retained therebetween by surface tension seals.

Regarding claim 5, Dunfield et al. disclose the thrust bearing passageway having a port opening adjacent to the thrust bearing, between the thrust bearing and the journal bearing for equalizing air pressure at either side of the journal bearing.

Regarding claim 6, Dunfield et al. disclose the shaft is fixed relative to the stator and the hub sleeve forms part of the rotor.

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Regarding claim 7, Dunfield et al. disclose the annular member or shaft includes an annular groove to either side of the annular member to further assist in formation of the surface tension seals.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (703) 308-7626. The fax phone number for this Group is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0656.

A handwritten signature in black ink, appearing to read 'Thanh Lam', with a stylized, flowing script.

Thanh Lam

Patent Examiner